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EXAMINER	
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ART UNIT	PAPER NUMBER
2462	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,336	BOUCHER ET AL.	
	Examiner	Art Unit	
	MON CHERI DAVENPORT	2462	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-11 and 16-27* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-11 and 16-27* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-11, 17-22, and 24-27** rejected under 35 U.S.C. 103(a) as being unpatentable over Kerr et al. (US Patent 6,243,667) in view of Willkie et al. (US Patent 6,683, 851).

Regarding **Claim 1** Kerr et al. discloses a method of identifying multiple packets in a communication flow between a source entity and a destination entity, comprising (see figure 2, message flow patterns):

storing, in a network interface for the destination entity, a first flow identifier of a first packet received from a source entity for a destination entity, wherein said first flow identifier comprises an identifier of the source entity and an identifier of the destination entity, including source and destination Transmission Control Protocol (TCP) port numbers (see col. 3, lines 57-67, flow identifying, identifying a flow for the packet, see col. 6, lines 29-41, the flow cache, stores the flow identifiers, including the source and the destination, see col. 1, lines 62-66, the collected information is reported to devices on the network(reads on network interface devices for the destination entity as broadly claimed), see also figure 1, section 540 reporting device, see col. 2 line 61- col. 3 line 2, a message flow 160 is defined by a network-layer address for a particular source device 120, a particular port number at the source device 120, a network-layer address for a particular destination device 130, a particular port number at the destination device

130, and a particular transmission protocol type. For example, the transmission protocol type may identify a known transmission protocol, such as TCP);

decoding, by said network interface, a header of the first packet to determine a length of data to be stored in said destination entity, wherein said header conforms to a protocol above TCP(see col. 3, lines 25-34, a message flow may be identified responsive to other factors. These other factors may include one or more of the following: information in packet headers the packet length);

storing, in said network interface said first packet in a packet memory for transfer toward the destination entity; storing in said network interface a second flow identifier of a second packet(see col. 6, lines 32-42, flow cache(memory), stores the flow identifiers, see col. 3, lines 56-67, the router stores the packet for transfer to the destination);

storing in said network interface said second packet in said packet memory; determining whether said first flow identifier matches said second flow identifier(see col. 3, lines 55-67, the router stores packets, and identifies the message flow using the flow identifier of the header);

storing a first indicator in the destination entity if a first communication flow identified by said first flow identifier comprises said second packet;(see col. 7, lines 56-57, collecting and reporting information about messages flow, reporting reads on a indicator), see col. 8, lines 35-56, the routing device transmits the information packet about message flows(including the flow identified) to a destination device, see col. 4, lines 1-7, the routing device look up the flow cache to determine a flow, results are identified or new) and

storing a second indicator in the destination entity if said first packet is the only packet stored in the packet memory that is part of said first communication flow(see col. 7, lines 56-57, collecting and reporting information about messages flow, reporting reads on a indicator), see col. 8, lines 35-56, the routing device transmits the information packet about message flows(including when the flow identified includes only one packet) to a destination device, see col. 4, lines 1-7, the flow is identified as new if the first packet only packet part of the communication flow).

Kerr et al. fail to explicitly state storing a first indicator in the destination entity, and storing a second indicator in the destination entity as claimed.

However Willkie et al. teaches storing a first indicator in the destination entity, and storing a second indicator in the destination entity (see col. 3, lines 45-65, Willkie et al. teaches a QMIP unit which receives and stores data from a set of modules, which comprises a memory which stores a received flow control indication from each module, the flow indicator indicates if transmission of data is to cease , the QMIP creates a frame which carries data information and flow control indication , the QMIP forward frame over the common data link).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to combine Kerr et al. invention with Willkie et al. invention because Willkie et al. transfers data between multiple entities over a serial link in a efficient manner(see Willkie et al. see col. 3, lines 38-41)

Regarding **Claims 3 and 22** Kerr et al. discloses a method of identifying one or more packets in a communication flow between a source entity and a destination entity, comprising:

receiving a first packet at a communication device that is a network interface for a host computer (see col. 3, lines 55-56, receives a packet, see figure 1, section 140, routing device);

identifying by said network interface a first communication flow comprising said first packet with a first flow identifier configured to identify both the source entity and the destination entity including source and destination Transmission Control Protocol (TCP) port numbers (see col. 3, lines 57-67, flow identifying, identifying a flow for the packet, see col. 6, lines 29-41, the flow cache, stores the flow identifiers, including the source and the destination, see col. 2 line 61- col. 3 line 2, a message flow 160 is defined by a network-layer address for a particular source device 120, a particular port number at the source device 120, a network-layer address for a particular destination device 130, a particular port number at the destination device 130, and a particular transmission protocol type. For example, the transmission protocol type may identify a known transmission protocol, such as TCP);

decoding, by said network interface, a header of the first packet to determine a length of data to be stored in said destination entity, wherein said header conforms to a protocol above TCP(see col. 3, lines 25-34, a message flow may be identified responsive to other factors. These other factors may include one or more of the following: information in packet headers the packet length);

determining by said network interface whether said first communication flow also comprises a second packet received at said communication device after said first packet was received at said communication device(see col. 3, lines 49-67, the router determines the message flow of the received packets); and

transferring said first packet to a host computer for processing in accordance with a communication protocol associated with said first packet (see col. 8, lines 35-59, the router build an information packet which is then sent to a destination device (host computer), in accordance to a communication protocol, for processing, see col. 2-3, lines 50-2, the router, processes in accordance to a transmission protocol type of the first packet).

Kerr et al. fail to explicitly point out transferring said first packet to a host computer as claimed.

However Willkie et al. teaches transferring said first packet to a host computer (see col. 3, lines 60-65, the QMIP unit creates a frame which carries data information and flow control information and forwards the frame over the common data link to a host computer (entity)).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to combine Kerr et al. invention with Willkie et al. invention because Willkie et al. transfers data between multiple entities over a serial link in a efficient manner(see Willkie et al. see col. 3, lines 38-41).

Regarding **Claims 2 and 24** Kerr et al. discloses everything as applied above (*see claims 1 and 3*).

prior to said storing a first flow identifier, parsing said first packet to retrieve said identifier of the source entity and said identifier of the destination entity(see col. 3, lines 56-67, the routing device examines a header for the packet, to retrieve identifiers).

Regarding **Claim 4** Kerr et al. discloses everything as applied above (*see claim 3*).

transferring said second packet to said host computer(see col. 3, lines 55-56, the router receive packet, by definition the router receives packet than forwards the packet to destination);

wherein said host computer is configured to collectively process a data portion of said first packet and a data portion of said second packet in accordance with said protocol (see col. 2-3, lines 50-2, the router, processes in accordance to a transmission protocol type of the first packet, see col. 3, lines 57-67, the header is examined, the destination device (host computer) will process the packet likewise).

Regarding **Claims 5 and 18** Kerr et al. discloses everything as applied above (*see claims 3 and 16*).

wherein said identifying comprises:

receiving, by said network interface a flow key generated by concatenating an identifier of the source entity and an identifier of the destination entity(see col. 6, lines 32-41, the flow keys , with information about message flows to include the source and the destination flow identifiers);

wherein said first flow identifier comprises said flow key(see col. 6, lines 32-41, the flow cache includes the flow keys about the messages flows).

Regarding **Claims 6 and 17** Kerr et al. discloses everything as applied above (*see claims 3 and 16*).

wherein said identifying comprises:

receiving, by said network device an index of said first communication flow in a flow database; wherein said first flow identifier comprises said index(see1 col. 6, lines 31-49, the flow cache had a buckets of entries, of a database flow, which comprises a four-byte pointer(reads on index)).

Regarding **Claim 7** Kerr et al. discloses everything as applied above (*see claim 3*).

wherein said determining comprises comparing said first flow identifier with a second flow identifier associated with said second packet (see col. 4, lines 1-7, the routing device performs lookup in a flow cache comparing the flow identifiers with second packet to determine message flows).

Regarding **Claim 8** Kerr et al. discloses everything as applied above (*see claim 7*).

wherein said determining further comprises:

storing said first flow identifier in a flow memory(see col. 6, lines 29-50, the flow cache stores the flow identifiers in a flow memory) ; and

storing said second flow identifier in said flow memory(see col. 6, lines 29-50, the second flow identifier is stored); and

comparing said stored first flow identifier and said stored second flow identifier(see col. 4, lines 1-7, the message flow is identified by comparing flow identifiers).

Regarding **Claim 9** Kerr et al. discloses everything as applied above (*see claim 8*).

wherein said flow memory is an associative memory in said communication device (see figure 3, section 300 flow caches).

Regarding **Claim 10** Kerr et al. discloses everything as applied above (*see claim 3*).

storing said first packet in a packet memory (see col. 7, lines 59-61, collecting information about message flow patterns, to include, see col. 8, lines 4-16, collecting (storing) actual data, packets transmitted as part of the flow itself) see col. 2, lines 40-45, the router stores the packet in its memory).

Regarding **Claim 11** Kerr et al. discloses everything as applied above (*see claim 10*).

wherein said determining comprises comparing said first flow identifier configured to identify said first communication flow with a second flow identifier configured to identify a second communication flow comprising a packet stored in said packet memory (see col. 4, lines 1-7, the message flow is identified by comparing flow identifiers, if new flow is determined or old message flow).

Regarding **Claim 19** Kerr et al. discloses everything as applied above (*see claim 16*).

wherein said packet memory comprises said flow memory (see col. 3, lines 40-48, the routing device (packet memory, maintains the flow cache)).

Regarding **Claim 20 and 27** Kerr et al. discloses everything as applied above (*see claims 16 and 3*).

storing a first indicator in a host memory if said communication flow comprises said second packet; and storing a second indicator in said host memory if said first packet is the only packet in said packet memory that is part of said communication flow (see col. 4, lines 1-7, the message flow is identified by comparing flow identifiers, if new flow is determined or old message flow).

Regarding **Claims 21, 25 and 26** Kerr et al. discloses a communication interface, comprising:

a header parser configured to parse a header of a first packet received at the communication interface, wherein the first packet was issued from a source entity for a destination entity, and the communication interface is attached to the destination entity(see col. 3, lines 57-67, the router device examines the headers of the received packets, see figure 1, communication interface attached via a communication link);

a flow database configured to facilitate management of a communication flow comprising the first packet, the flow database comprising(see1 col. 6, lines 31-49, the flow cache had a buckets of entries, of a database flow, which comprises a four-byte pointer(reads on index)):

a flow key configured to identify the communication flow using identifiers of the source entity and the destination entity(see col. 6, lines 32-36, the flow cache, comprise a memory which associated flow keys which include the source and the destination);

an activity indicator configured to indicate a recency with which a packet in the communication flow has been received(see col. 5, lines 51-54, at step 241, the routing device

examines, in the flow cache and compares the current time with the last time a packet was routed using a particular entry); and

a validity indicator for indicating whether the communication flow is valid(see col. 3, lines 39-49, the routing device maintains the flow cache and remove message flow that are no longer valid. Indicating message flow is no longer valid);

a code generator configured to generate an operation code for the first packet, to facilitate forwarding of the first packet toward the destination entity(see col. 6, lines 29-41, the flow cache has flow keys that reads on operation code, which includes information about a particular message flow); and

a packet batching module configured to determine whether a second packet received at the communication interface is part of the communication flow(see col. 3-4, lines 57-7, the router device identifies a message flow by comparing received packets).

said flow identifier including source and destination Transmission Control Protocol (TCP) port numbers (see col. 2 line 61- col. 3 line 2, a message flow 160 is defined by a network-layer address for a particular source device 120, a particular port number at the source device 120, a network-layer address for a particular destination device 130, a particular port number at the destination device 130, and a particular transmission protocol type. For example, the transmission protocol type may identify a known transmission protocol, such as TCP);

decoding, by said network interface, a header of the first packet to determine a length of data to be stored in said destination entity, wherein said header conforms to a protocol above TCP(see col. 3, lines 25-34, a message flow may be identified responsive to other factors. These

other factors may include one or more of the following: information in packet headers the packet length);

Claim Rejections - 35 USC § 103

3. **Claims 16 and 23** rejected under 35 U.S.C. 103(a) as being unpatentable over Kerr et al. (US Patent 6,243,667) in view of Davies et al. (US Patent 5,819,111).

Regarding **Claim 16** Kerr et al. discloses a method of transferring a packet from a network interface to a host computer, comprising:

receiving a first packet at a network interface for a host computer(see col. 3, lines 55-56, receives a packet, see figure 1, section routing device);

storing said first packet in a packet memory see col. 3, lines 55-67, the router stores packets)

receiving a first flow identifier configured to identify a communication flow comprising said first packet(see col. 3, lines 57-67, flow identifying, identifying a flow for the packet, see col. 6, lines 29-41, the flow cache, stores the flow identifiers, including the source and the destination);

storing said first flow identifier in a flow memory(see col. 6, lines 29-41, the flow cache, stores the flow identifiers, including the source and the destination);

searching said flow memory for a second packet in said communication flow received at the network interface after said first packet(see col. 3, lines 49-67, the router determines the message flow of the received packets);

transferring header of said first packet to said host computer(see col. 8, lines 35-59, the router builds an information packet which is then sent to a destination device (host computer), in accordance to a communication protocol, for processing, see col. 2-3, lines 50-2, the router, processes in accordance to a transmission protocol type of the first packet, see col. 3, lines 57-60, routing device examines the header); and

including source and destination Transmission Control Protocol (TCP) port numbers (see col. 2 line 61- col. 3 line 2, a message flow 160 is defined by a network-layer address for a particular source device 120, a particular port number at the source device 120, a network-layer address for a particular destination device 130, a particular port number at the destination device 130, and a particular transmission protocol type. For example, the transmission protocol type may identify a known transmission protocol, such as TCP);

decoding, by said network interface, a header of the first packet to determine a length of data to be stored in said destination entity, wherein said header conforms to a protocol above TCP(see col. 3, lines 25-34, a message flow may be identified responsive to other factors. These other factors may include one or more of the following: information in packet headers the packet length);

Kerr et al. fails to specifically point out configuring an indicator in a host memory to indicate whether processing of said first packet by said host computer should be delayed to await transfer of said second packet to said host memory as claimed.

Davies et al. teaches configuring an indicator in a host memory to indicate whether processing of said first packet by said host computer should be delayed to await transfer of said

second packet to said host memory (See col 4, lines 8-13, The disabling step can include checking if a run length encoded data transfer is pending from the host, and if so, delaying disabling of the data transfers from the host to the peripheral until a data byte associated with the run length encoded data is received by the interface controller, otherwise do not delay).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to combine Kerr et al. invention with Davies et al. invention because Davies et al. invention provides provide methods and apparatus for reducing the complexity of programming on the peripheral side of an IEEE interface (see Davies et al. col. 3, lines 10-16)

Regarding **Claim 23** Kerr et al. discloses a processor readable storage medium containing a data structure configured to store information concerning a packet to be transferred from a network interface to a host computer, the data structure including one or more entries, each entry comprising:

a flow number configured to identify a communication flow comprising a first packet received at the network interface from a source entity for a destination entity associated with the host computer(see col. 6, lines 29-41, the flow cache has flow keys that reads on flow number); and

a validity indicator configured to provide(see col. 3, lines 39-49, the routing device maintains the flow cache and remove message flow that are no longer valid. Indicating message flow is no longer valid);

wherein said data structure is searched for a second entry containing said flow number when said first packet is transferred to the host computer to determine if said communication

flow also comprises a second packet received at the network interface after said first packet (see col. 3-4, lines 57-7, the routing device identifies a message flow, the packets are compared to determine if is part of a message flow).

including source and destination Transmission Control Protocol (TCP) port numbers (see col. 2 line 61- col. 3 line 2, a message flow 160 is defined by a network-layer address for a particular source device 120, a particular port number at the source device 120, a network-layer address for a particular destination device 130, a particular port number at the destination device 130, and a particular transmission protocol type. For example, the transmission protocol type may identify a known transmission protocol, such as TCP);

Kerr et al. fails to specifically point out a first indication if said first packet is free of errors and ready for transfer to the host computer; and a second indication if said first packet is a control packet as claimed;

Davies et al teaches a first indication if said first packet is free of errors and ready for transfer to the host computer (See col 4, lines 1-13, The disabling step can include checking if a run length encoded data transfer is pending from the host, and if so, delaying disabling of the data transfers from the host to the peripheral until a data byte associated with the run length encoded data is received by the interface controller, otherwise do not delay, the disabling step reads on an indication, and control status flag indicates that the data is ready, error free and pending)

a second indication if said first packet is a control packet(see col. 3, lines 28-41, method can include after execution of the step of transferring a data block, either setting the interface controller to disable acknowledgment of receipt of data if a flow control status flag indicates pending flow stop, receiving of control packets)

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to combine Kerr et al. invention with Davies et al. invention because Davies et al. invention provides provide methods and apparatus for reducing the complexity of programming on the peripheral side of an IEEE interface (see Davies et al. col. 3, lines 10-16).

Response to Arguments

Claim Rejections - 35 USC § 101

Previous rejection under 35 USC 101 withdrawn in view of Applicant's amendment filed 6/16/2011.

4. Applicant's arguments filed 6/16/2011 have been fully considered but they are not persuasive.

In the remarks on pgs. 11-14 and 18 of the amendment, the applicant contends that Kerr et al. in view of Willkie does not teach or suggest "decoding, by said network interface, a header of the first packet to determine a length of data to be stored in said destination entity, wherein said header conforms to a protocol above TCP"

Examiner respectfully disagrees Kerr et al. teaches in particular transmission protocol type including TCP, the message flow is decoded using the information in the header to include the packet length.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MON CHERI DAVENPORT whose telephone number is (571)270-1803. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xavier Szewai Wong/
Primary Examiner, Art Unit 2462

/Mon Cheri S Davenport/
Examiner, Art Unit 2462
August 31, 2011